QC-ABSTRACT

Name of Work:- Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4 Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division

Sl No.	Item	Quantity As Per BOQ	Required No's of tests	Actual No's of tests	Tests
1	PCC 1:4:8	116.25 Cum	1	1	Cement
					Sand, Aggregates
2	M30	116.25 Cum	6	6	Concrete Cube Compressive Strength
3	Slab 100mm	113.40 Sqm	1	1	Compressive strength
4	WMM	10.81 Cum			-
	Gradation		1	1	
	Aggregate Impact Value		1	1	
	Shape test		1	1	
	Atterberg Limit		1	1	
5	DBM	10.86 Cum			-
	Quality Binder		1	1	
	Aggregate Impact Value		1	1	
	Shape test		1	1	
	Specific Gravity		1	1	
	Gradation		1	1	
	Stability of Mix		1	1	
	Bitumin Content		1	1	
6	BC	45.36 Cum			-
	Quality Binder		1	1	
	Aggregate Impact Value		1	1	
	Shape test		1	1	
	Specific Gravity		1	1	
	Gradation		1	1	
	Stability of Mix		1	1	
	Bitumin Content		1	1	

Cubes

0-5 m^3	1set
6-15 m^3	2set
16-30 m^3	3set
31-50 m^3	4 set

Add 1set for every 50 Cum

ASSISTANT EXECUTIVE ENGINEER
Vidyaranyapura Sub-Division
Bruhat Bengaluru Palike

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Job No : CQCE/BBMP/VP/W.No.10/2021-22

Date: 07.04.2021

TEST REPORT ON CEMENT

Client : **Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

Agency : **Sri.V. Ponnuswamy,** Contractor, Bangalore.

Name of Work : Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division

Sample ID: : Cement (Zuari 53 grade OPC)

Sample Supplied by: : AGENCY

Date of Manufacture: :March - 2021

Date of Testing : 05.04.2021 to 07.04.2021

Sl.No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 269:2015
1	a) Initial Setting Time	IS-4031 (Part - 5):1988(RA 2014)	140 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part - 5):1988(RA 2014)	350 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part 3) :1988 (RA 2014) by the Le-Chatelier method	1 mm	Not more than 10 mm
3	Standard Consistency	IS-4031 (Part -4)	30.00%	-

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Authorised Signatory

ASSISTANT EXECUTIVE ENGINEER

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Job No.: CQCE/BBMP/VP/W.No.10/2021-22

Date : 05.04.2021

TEST REPORT ON FINE AGGREGATES (SAND)

Client : **Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

Agency : **Sri.V. Ponnuswamy,** Contractor, Bangalore.

Name of Work : Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division

Date of Testing : 05.04.2021

IS Code : IS 383:2016

: IS 2386 (Part 1):1963(RA 2011)

Material : Sand

Total Wt. of Aggregates in gms **1000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Requirements as per IS 383:2016 Spec.Limits For Zone-II
10	0	0	0	100	100
4.75	84	8.40	8.40	91.6	90-100
2.36	119	11.90	20.30	79.7	75-100
1.18	182	18.20	38.50	61.5	55-90
600 Micron	265	26.50	65.00	35.0	35-59
300 Micron	185	18.50	83.50	16.5	8-30
150 Micron	136	13.60	97.10	2.9	0-10

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Job No.: CQCE/BBMP/VP/W.No.10/2021-22

Date : 05.04.2021

TEST REPORT ON COARSE AGGREGATES

Client : **Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

Agency : **Sri.V. Ponnuswamy,** Contractor, Bangalore.

Name of Work : Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division

Date of Testing : 05.04.2021

IS Code : IS 383:2016

: IS 2386 (Part 1):1963(RA 2011)

Material : 20mm Aggregates

Total Wt. of Aggregates in gms= **5000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Requirements as per IS 383:2016
40	0	0	0	100	100
20	189	3.8	3.8	96.2	95-100
10	2836	56.7	60.5	39.5	25-55
4.75	1752	35.0	95.5	4.5	0-10

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Job No.: CQCE/BBMP/VP/W.No.10/2021-22

Date : 05.04.2021

TEST REPORT ON COARSE AGGREGATES

Client : **Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

Agency : **Sri.V. Ponnuswamy,** Contractor, Bangalore.

Name of Work : Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division

Date of Testing : 05.04.2021

IS Code : IS 383:2016

: IS 2386 (Part 1):1963(RA 2011)

Material : 40mm Aggregates

Total Wt. of Aggregates in gms **15000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Requirements as per IS 383:2016
80	0	0	0	100	100
40	198	1.32	1.32	98.68	95-100
20	8326	55.51	56.83	43.17	30-70
10	3120	20.80	77.63	22.37	10-35
4.75	2836	18.91	96.53	3.47	0-5

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EXECUTIVE ENGINEER

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Job No.: CQCE/BBMP/VP/W.No.10/2021-22 Date : 05.04.2021

TEST REPORT ON FINE AGGREGATES (SAND)
IS 1542-1992

Client : **Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

Agency : **Sri.V. Ponnuswamy,** Contractor, Bangalore.

Name of Work :Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division

Date of Testing : 05.04.2021

Material : Sand(Plastering) Total wt. of aggregates in gms = **1000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits as per IS 1542-1992
10	0	0	0	100	100
4.75	14	1.40	1.40	98.6	95-100
2.36	16	1.60	3.00	97.0	95-100
1.18	38	3.80	6.80	93.2	90-100
600 Micron	75	7.50	14.30	85.7	80-100
300 Micron	264	26.40	40.70	59.3	20-65
150 Micron	515	51.50	92.20	7.8	0-15

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Job No.: CQCE/BBMP/VP/W.No.10/2021-22 Date : 05.04.2021

TEST REPORT ON FINE AGGREGATES (SAND)
IS 2116-1980

Client : **Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

Agency : **Sri.V. Ponnuswamy,** Contractor, Bangalore.

Name of Work :Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division

Date of Testing : 05.04.2021

Material : Sand(Masonry) Total wt. of aggregates in gms = **1000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits as per IS 2116-1980
4.75	0	0.00	0.00	100.0	100
2.36	14	1.40	1.40	98.6	90-100
1.18	35	3.50	4.90	95.1	70-100
600 Micron	89	8.90	13.80	86.2	40-100
300 Micron	255	25.50	39.30	60.7	5-70
150 Micron	498.6	49.86	89.16	10.8	0-15

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Job No.: CQCE/BBMP/VP/W.No.10/2021-22 Date: 26.04.2021

PRECAST SLAB 100mm Thick(CORE) TEST REPORT

Client	:	**Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
Contractor	:	**Sri.V. Ponnuswamy,** Contractor, Bangalore.
Name of Work	:	Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division
No.of Sample Tested	:	03
Date of Testing	:	26.04.2021
Techinical Reference	:	IS:516-1959 (Reaffirmed 1999), SP-24:1983.
Grade of Concrete	:	M_{20}

Sl. No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	50.00	80.00	0.369	2349.13	1.60	0.957	34.50	17.57	18.98	18.16	22.70
2	50.00	85.00	0.378	2264.87	1.70	0.968	33.90	17.27	18.65	18.04	22.55
3	50.00	80.00	0.364	2317.30	1.60	0.957	33.10	16.86	18.21	17.42	21.77

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For CIVIL AIM CONSULTANTS & ENGINEERS

Authorised Signatory

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Job No.: CQCE/BBMP/VP/W.No 10/2021-2022 Date: 03.05.2021

Aggregate Impact Value

Client	**Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
Agency	**Sri.V. Ponnuswamy,** Contractor, Bangalore.
Name of the Work	Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division
IS Code	IS 2386 (Part 4):1963(RA 2011)
Type of Mix	Wet Mix macadam
Date of Testing	03.05.2021

Sl No.	Details	Test No. 1	Test No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	385	385	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	85	87	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	300	298	
4	Aggregate Impact value = percent fines 100* (W_2/W_1)%	22.08	22.60	**22.34**

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%(As per MORTH Specication table 400.12)

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Job No.: CQCE/BBMP/VP/W.No 10/2021-2022 Date : : 03.05.2021

GRADATION FOR WMM

Client : **Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

Agency : **Sri.V. Ponnuswamy,** Contractor, Bangalore.

Name of Work Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division

IS Code: : IS 2386 (Part 1):1963(RA 2011)

Date of Testing : 03.05.2021

Material Type : Wet Mix Macadam

Oven Dry.Wt, grams 10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirement as per MORTH 5th edition table no 400.13
53	0	0	0	100	100
45	204	204	2.0	98.0	95-100
22.4	2554	2758	27.6	72.4	60-80
11.2	2158	4916	49.2	50.8	40-60
4.75	1897	6813	68.1	31.9	25-40
2.36	1154	7967	79.7	20.3	15-30
0.600	582	8549	85.5	14.5	8-22
0.075	1215	9764	97.6	2.4	0-5

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Job No.: CQCE/BBMP/VP/W.No 10/2021-2022 Date : 03.05.2021

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	: **Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
Agency	: **Sri.V. Ponnuswamy,** Contractor, Bangalore.
Name of Work	Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division
BIS code:	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	03.05.2021

Sl no	Test	1	2	Requirements as per MORTH 5th edition table no 400.12
1	Flakiness Index %	10.8	10.5	Combined Flakiness & Elongation index Max 35%
2	Elongation Index %	11.9	11.3	
	Combined Flakiness & Elongation index	22.70	21.8	

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Job No.: CQCE/BBMP/VP/W.No 10/2021-2022

Date : 05.05.2021

ATTERBERG LIMITS TEST FOR WMM

Client : **Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

Agency : **Sri.V. Ponnuswamy,** Contractor, Bangalore.

Name of Work : Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division

IS Code: IS 2720(Part 5):1985

Date of Testing : 03.05.2021 to 05.05.2021

Material Type : Wet Mix Macadam

Sl. No.	Particulars	Test Results	Requirement as per MORTH 5th edition Cl.406.2.1.2
1	Liquid Limit	22.50	-
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

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Job No.: CQCE/BBMP/VP/W.No.10/2021-22

Date: 17.05.2021

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client : **Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

Agency : **Sri.V. Ponnuswamy,** Contractor, Bangalore.

Name of the work : Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{30}

Compressive Strength as on : 7th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	10.05.2021	17.05.2021	8.156	508.3	22.59
2	10.05.2021	17.05.2021	8.138	516.3	22.95
3	10.05.2021	17.05.2021	8.149	489.6	21.76

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Job No.: CQCE/BBMP/VP/W.No.10/2021-22 Date: 07.06.2021

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client : **Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

Agency : **Sri.V. Ponnuswamy,** Contractor, Bangalore.

Name of the work : Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{30}

Compressive Strength as on : 28th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	10.05.2021	07.06.2021	8.184	735.2	32.68
2	10.05.2021	07.06.2021	8.168	728.6	32.38
3	10.05.2021	07.06.2021	8.192	716.2	31.83

Note:

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3. Any Query regarding the report must be reported within 30 days from the date of testing.

For CIVIL AIM CONSULTANTS & ENGINEERS

Authorised Signatory

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ASSISTANT EXECUTIVE ENGINEER

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Job No.: CQCE/BBMP/VP/W.No.10/2021-22

Date: 17.05.2021

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client : **Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

Agency : **Sri.V. Ponnuswamy,** Contractor, Bangalore.

Name of the work : Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{30}

Compressive Strength as on : 7th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	10.05.2021	17.05.2021	8.136	505.2	22.45
2	10.05.2021	17.05.2021	8.154	488.9	21.73
3	10.05.2021	17.05.2021	8.149	516.3	22.95

Note:

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Job No.: CQCE/BBMP/VP/W.No.10/2021-22 Date: 07.06.2021

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client : **Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

Agency : **Sri.V. Ponnuswamy,** Contractor, Bangalore.

Name of the work : Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{30}

Compressive Strength as on : 28th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	10.05.2021	07.06.2021	8.198	732.6	32.56
2	10.05.2021	07.06.2021	8.184	716.2	31.83
3	10.05.2021	07.06.2021	8.165	728.6	32.38

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Job No.: CQCE/BBMP/VP/W.No.10/2021-22 Date: 17.05.2021

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client : **Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

Agency : **Sri.V. Ponnuswamy,** Contractor, Bangalore.

Name of the work : Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{30}

Compressive Strength as on : 7th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	10.05.2021	17.05.2021	8.145	501.2	22.28
2	10.05.2021	17.05.2021	8.136	488.9	21.73
3	10.05.2021	17.05.2021	8.165	492.6	21.89

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Job No.: CQCE/BBMP/VP/W.No.10/2021-22 Date: 07.06.2021

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Client : **Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

Agency : **Sri.V. Ponnuswamy,** Contractor, Bangalore.

Name of the work : Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{30}

Compressive Strength as on : 28th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	10.05.2021	07.06.2021	8.184	499.6	22.20
2	10.05.2021	07.06.2021	8.169	505.2	22.45
3	10.05.2021	07.06.2021	8.152	516.3	22.95

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Name of the work : Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{30}

Compressive Strength as on : 7th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	10.05.2021	17.05.2021	8.198	716.2	31.83
2	10.05.2021	17.05.2021	8.188	728.6	32.38
3	10.05.2021	17.05.2021	8.164	708.9	31.51

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For CIVIL AIM CONSULTANTS & ENGINEERS

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Client : **Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

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Name of the work : Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{30}

Compressive Strength as on : 28th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	10.05.2021	07.06.2021	8.184	718.2	31.92
2	10.05.2021	07.06.2021	8.165	726.3	32.28
3	10.05.2021	07.06.2021	8.155	734.6	32.65

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Client : **Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

Agency : **Sri.V. Ponnuswamy,** Contractor, Bangalore.

Name of the work : Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{30}

Compressive Strength as on : 7th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	10.05.2021	17.05.2021	8.168	502.2	22.32
2	10.05.2021	17.05.2021	8.188	516.3	22.95
3	10.05.2021	17.05.2021	8.146	489.6	21.76

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For CIVIL AIM CONSULTANTS & ENGINEERS

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Name of the work : Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{30}

Compressive Strength as on : 28th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	10.05.2021	07.06.2021	8.198	708.2	31.48
2	10.05.2021	07.06.2021	8.184	716.3	31.84
3	10.05.2021	07.06.2021	8.165	728.9	32.40

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Job No.: CQCE/BBMP/VP/W.No.10/2021-22 Date: 17.05.2021

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client : **Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

Agency : **Sri.V. Ponnuswamy,** Contractor, Bangalore.

Name of the work : Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{30}

Compressive Strength as on : 7th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	10.05.2021	17.05.2021	8.168	502.2	21.32
2	10.05.2021	17.05.2021	8.188	516.3	22.95
3	10.05.2021	17.05.2021	8.146	489.6	21.76

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Job No.: CQCE/BBMP/VP/W.No.10/2021-22 Date: 07.06.2021

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client : **Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

Agency : **Sri.V. Ponnuswamy,** Contractor, Bangalore.

Name of the work : Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{30}

Compressive Strength as on : 28th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	10.05.2021	07.06.2021	8.198	708.2	30.48
2	10.05.2021	07.06.2021	8.184	716.3	31.84
3	10.05.2021	07.06.2021	8.165	728.9	32.40

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For CIVIL AIM CONSULTANTS & ENGINEERS

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JobNo: CQCE/BBMP/VP/W.No.10/2021-22 Date: : 20.09.2021

TEST RESULTS OF AGGREGATE IMPACT VALUE

Client : **Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalo

Agency : **Sri.V. Ponnuswamy,** Contractor, Bangalore.

Name of work :Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division

Source / Location : Hot Mix Plant, Bangalore

BIS Code : IS 2386 Part (4):1963

Type of Mix : Dense Graded Bituminous Macadam

Date of test : 20.09.2021

Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W1 g	400	400	
2	Weight of agregate passing 2.36 mm sieve after the test = W2 g	88	86	
3	Weight of aggregate retained 2.36 mm sieve after the test = W3 g	312	314	
5	Aggregate Impact value = percent fines	22.00	21.50	**21.75**
	100* (W2/W1) percent			

Comments:

→ Maximum allowable Aggregate Impact value for Dense Graded Bituminous Macadam is 27% (Table 500-8 of MORTH specification)

For CIVIL AIM CONSULTANTS & ENGINEERS

Authorised Signatory

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ASSISTANT EXECUTIVE ENGINEER

Vidyaranyapura Sub-Division

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NABL Accredited As Per ISO/IEC 17025:2017 Laboratory

Job No.: CQCE/BBMP/VP/W.No.10/2021-22 Date: 20.09.2021

Aggregate Gradation Test

Client	**Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
Agency	**Sri.V. Ponnuswamy,** Contractor, Bangalore.
Name of the Work	Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division
BIS Code	IS 2386(Part 1):1963(RA 2011)
Sample I / D	Hot mix Plant, Bangalore.
Type of Mix	Dense Graded Bituminous Macadam
Date of Testing	20.09.2021

Total Weight of Sample: **10000** gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Requirement as per MORTH table 500.10	Remarks
37.50	0	0.0	0	100	100	Gradation satisfies Grade II MORTH specification
26.50	715	7.2	7.15	92.85	90 - 100	
19.00	1265	12.7	19.80	80.20	71 - 95	
13.20	1385	13.9	33.65	66.35	56 - 80	
4.75	2514	25.1	58.79	41.21	38 - 54	
2.36	1097	11.0	69.76	30.24	28 - 42	
0.300	1319	13.2	82.95	17.05	7 - 21	
0.075	1156	11.6	94.51	5.49	2 - 8	

Total Weight of Sample: **10000** gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Requirement as per MORTH table 500.10	Remarks
37.5	0	0.0	0	100	100	Gradation satisfies Grade II MORTH specification
26.5	685	6.9	6.85	93.15	90 - 100	
19	1415	14.2	21.00	79.00	71 - 95	
13.2	1136	11.4	32.36	67.64	56 - 80	
4.75	2415	24.2	56.51	43.49	38 - 54	
2.360	1159	11.6	68.10	31.90	28 - 42	
0.300	1312	13.1	81.22	18.78	7 - 21	
0.075	1174	11.7	92.96	7.04	2 - 8	

Note:

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ASSISTANT EXECUTIVE ENGINEER
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Nagarabhavi Palike
Bruhath Bangalore

For CIVIL AIM CONSULTANTS & ENGINEERS

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JobNo: CQCE/BBMP/VP/W.No.10/2021-22 Date : 22.09.2021

TEST RESULTS OF AGGREGATE SHAPE TEST
(Flakiness & Elongation)

Client : **Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

Agency : **Sri.V. Ponnuswamy,** Contractor, Bangalore.

Name of work :Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division

BIS Code : IS 2386 Part (1):1963

Date of Test : 22.09.2021

Type of Mix : Dense Graded Bituminous Macadam

Sl.No.	Flakiness Index Value(%)	Elongation Index Value(%)	Total(Combined Flakiness and Elongation)(%)	Requirements
1	10.30	11.70	22.00	Maximum allowable Combined Flakiness and Elongation Indices for Dense Graded Bituminous Macadam is 35% as per Table 500.8 MORTH Specification.
2	11.50	10.90	22.40	

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Job No.: CQCE/BBMP/VP/W.No.10/2021-22 Date: 22.09.2021

Specific Gravity And Water Absorption Test

Client	**Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
Agency	**Sri.V. Ponnuswamy,** Contractor, Bangalore.
Name of the Work	Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division
BIS Code	IS 2386(Part 3):1963
Type of Mix	Dense Graded Bituminous Macadam
Date of Testing	20.09.2021 to 22.09.2021

Sl. No.	Details	Notation	Test Number			Mean Value
			Test 1	Test 2	Test 3	
1	Weight of aggregate suspended in water with the basket	W_1 g	2020	2022	2023	
2	Weight of basket suspended in water	W_2 g	754	754	754	
3	Weight of saturated aggregate in water	$(W_1 - W_2) = W_s$ g	1266	1268	1269	
4	Weight of saturated surface dry aggregate in air	W_3 g	2017	2016	2015	
5	Weight of water equal to the volume of the aggregate	$(W_3 - W_S)$ g	751	748	746	
6	Weight of oven dried aggregate	W_4 g	2007	2007	2005	
7	Specific Gravity	$W_4/(W_3-W_S)$	2.672	2.683	2.688	2.681
8	Apparent Specific gravity	$W_4/(W_4-W_S)$	2.709	2.716	2.724	2.716
9	Water Absorption	$((W_3-W_4)*100)/W_4$	0.50%	0.45%	0.50%	0.48%

Comments:

→ Maximum allowable Aggregate Water absorption value for Dense Graded Bituminous Macadam is 2.0%(As per MORTH table 500.8)

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Job No: CQCE/BBMP/VP/W.No.10/2021-22 Date: 22.09.2021

TEST REPORT ON PAVING BITUMEN

Client	**Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
Agency	**Sri.V. Ponnuswamy,** Contractor, Bangalore.
Name of work	Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division
BIS Code	IS 73:2013,IS 1203:1978, IS 1208:1978, IS 1205:1978, IS1448(P-69):1969
Date of Testing	**22.09.2021**
Type of Mix	**Dense Graded Bituminous Macadam , VG 30**
Source of Location	**Hot Mix Plant**

The results of the tests conducted on the bitumen sample using for Dense Graded Bituminous Macadam

Sl.No	Description	Test Result	Requirement as per IS:73:2013
1	Penetration at 25 0C, 100gms, 5sec, 1/10 mm	63	Min 45
2	Softening point, 0C	48	Min 47
3	Ductility at 250C, cm	99	Min40
4	Flash Point, 0C	226	Min 220

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Job No.: CQCE/BBMP/VP/W.No.10/2021-22 Date: 27.09.2021

TEST REPORT ON STABILITY OF MIX

Client	:	**Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
Agency	:	**Sri.V. Ponnuswamy,** Contractor, Bangalore.
Name of the Work	:	Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division
Type of Mix	:	Dense Graded Bituminous Macadam
Date of Testing	:	27.09.2021

The results of the tests conducted on the Dense Graded Bituminous Macadam mix sample are as follows:

Sl. No	Description	Test Result 1	Test Result 2	Requirement as per MORTH (Table 500-19)
1	Marshal Stability, Kn	9.86	9.64	9 Kn (min)
2	Marshal flow, mm	3.45	3.28	2 – 4
3	Percent air voids in Mineral Aggregate	14.74	13.42	13 – 15
4	Voids in Compacted Mix	3.89	3.92	3 – 6
5	Percent Voids filled with Bitumen	67.91	69.52	65 - 75
6	Density, g/cc	2.25	2.27	--

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Job No.: CQCE/BBMP/VP/W.No.10/2021-22 Date: 27.09.2021

BITUMEN CONTENT AND GRADATION DETERMINATION OF DENSE GRADED BITUMINOUS MACADAM MIX

AASHTO T 164 & AASHTO T 30

Client	**Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
Agency	**Sri.V. Ponnuswamy,** Contractor, Bangalore.
Name of the Work	Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division
Date of Testing	27.09.2021

BITUMEN CONTENT DETERMINATION

Description	Test 1	Test 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	477.1	477.6
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	22.90	22.40
7. Bitumen content in %	4.58	4.48
8. Average	**4.53**	

GRADATION AFTER EXTRACTION

SIEVE SIZE	Test 1				Requirement as per MORTH table 500.10
mm	Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	
37.5	0	0	0	100	100
26.5	33.4	33.4	7.0	93.0	90 - 100
19	72.9	106.3	22.3	77.7	71 - 95
13.2	65.8	172.1	36.1	63.9	56 - 80
4.75	83.9	256	53.7	46.3	38 - 54
2.360	75.2	331.2	69.4	30.6	28 - 42
0.300	96.8	428	89.7	10.3	7 - 21
0.075	21.6	449.6	94.2	5.8	2 - 8

SIEVE SIZE	Test 2				Requirement as per MORTH table 500.10
mm	Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	
37.5	0	0	0	100	100
26.5	36.5	36.5	7.6	92.4	90 - 100
19	72.4	108.9	22.8	77.2	71 - 95
13.2	66.9	175.8	36.8	63.2	56 - 80
4.75	84.50	260.3	54.5	45.5	38 - 54
2.360	78.6	338.9	71.0	29.0	28 - 42
0.300	97.6	436.5	91.4	8.6	7 - 21
0.075	23.5	460	96.3	3.7	2 - 8

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Job No.: CQCE/BBMP/VP/W.No.10/2021-22 Date: 1.10.2021

Aggregate Impact Value

Client	**Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
Agency	**Sri.V. Ponnuswamy,** Contractor, Bangalore.
Name of the Work	Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division
BIS Code	IS 2386(Part 4):1963
Source / Location	Hot Mix Plant, Bangalore
Type of Mix	Bituminous Concrete
Date of Testing	1.10.2021

Sl No.	Details	Test No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	385	380	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	86	85	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	299	295	
4	Aggregate Impact value = percent fines			
	100* (W_2/W_1) percent	22.34	22.37	**22.35**

Comments:

→ Maximum allowable Aggregate Impact value for Bituminous Concrete is 24%(MORTH table no.500.16)

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Job No.: CQCE/BBMP/VP/W.No.10/2021-22 Date : 02.10.2021

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
Agency	**Sri.V. Ponnuswamy,** Contractor, Bangalore.
Name of Work	Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Bituminous Concrete
Date of Testing	02.10.2021

Sl no	Test	1	2	3	Requirements as per MORTH 5th edition table no 500.16
1	Flakiness Index	11.5	9.8	10.2	Combined Flakiness & Elongation index Max 35%
2	Elongation Index	10.6	9.9	10.6	
	Combined Flakiness & Elongation index	22.10	19.70	20.80	

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Job No.: CQCE/BBMP/VP/W.No.10/2021-22 Date : 02.10.2021

Aggregate Gradation Test

IS : 2386 Part I

Client	**Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
Agency	**Sri.V. Ponnuswamy,** Contractor, Bangalore.
Name of the Work	Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division
BIS Code	IS 2386(Part 1):1963
Sample I / D	Hot Mix Plant, Bangalore
Type of Mix	Bituminous Concrete
Date of Testing	02.10.2021

Total Weight of Sample: **5000** gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Requirement as per MORTH table 500.17	Remarks
19	0	0	0	100	100	Gradation satisfies Bituminous concrete Grade-II specification as per MORTH
13.2	415	8.30	8.30	91.70	90 - 100	
9.5	485	9.70	18.00	82.00	70 - 88	
4.75	635	12.70	30.70	69.30	53 - 71	
2.36	678	13.56	44.26	55.74	42 - 58	
1.18	524	10.48	54.74	45.26	34 - 48	
0.600	556	11.12	65.86	34.14	26 - 38	
0.300	485	9.70	75.56	24.44	18 - 28	
0.150	325	6.50	82.06	17.94	12 - 20	
0.075	485	9.70	91.76	8.24	4 - 10	

Total Weight of Sample: **5000** gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Requirement as per MORTH table 500.17	Remarks
19	0	0	0	100	100	Gradation satisfies Bituminous concrete Grade-II specification as per MORTH
13.2	685	13.70	13.70	86.30	90 - 100	
9.5	545	10.90	24.60	75.40	70 - 88	
4.75	684	13.68	38.28	61.72	53 - 71	
2.36	539	10.78	49.06	50.94	42 - 58	
1.18	584	11.68	60.74	39.26	34 - 48	
0.600	545	10.90	71.64	28.36	26 - 38	
0.300	684	13.68	85.32	14.68	18 - 28	
0.150	157	3.14	88.46	11.54	12 - 20	
0.075	336	6.72	95.18	4.82	4 - 10	

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Job No.: CQCE/BBMP/VP/W.No.10/2021-22 Date: 04.10.2021

TEST REPORT

Client	:	**Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
Agency	:	**Sri.V. Ponnuswamy,** Contractor, Bangalore.
Name of the work	:	Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division
IS Code	:	IS 73:2013, IS 1203:1978(RA 2008), IS 1205:1978(RA 2009), IS 1208:1978(RA 2009), IS 1209:1978(RA 2009)
Source of location	:	Hot mix Plant, Bangalore, VG 30
Date of testing	:	04.10.2021

The results of the tests conducted on the bitumen sample using for Bituminous Concrete

Sl. No	Description	Test Result	Requirement as per IS:73:2013
1	Penetration at 25 ^{0}C, 1/10 mm	53	Min 45
2	Softening point, ^{0}C	52	Min. 47
3	Ductility at 27^{0}C, cm	> 100	Min. 40
4	Flash Point, ^{0}C	286	Min. 220

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Job No.: CQCE/BBMP/VP/W.No.10/2021-22 Date : 04.10.2021

Specific Gravity And Water Absorption Test

Client	**Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
Agency	**Sri.V. Ponnuswamy,** Contractor, Bangalore.
Name of the Work	Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division
BIS Code	IS 2386(Part 3):1963
Type of Mix	Bituminous Concrete
Date of Testing	02.10.2021 to 04.10.2021

Sl. No.	Details	Notation	Test Number			Mean Value
			Test 1	Test 2	Test 3	
1	Weight of aggregate suspended in water with the basket	W_1 g	2021	2020	2024	
2	Weight of basket suspended in water	W_2 g	755	755	755	
3	Weight of saturated aggregate in water	$(W_1 - W_2) = W_s$ g	1266	1265	1269	
4	Weight of saturated surface dry aggregate in air	W_3 g	2015	2015	2019	
5	Weight of water equal to the volume of the aggregate	$(W_3 - W_S)$ g	749	750	750	
6	Weight of oven dried aggregate	W_4 g	2005	2006	2009	
7	Specific Gravity	$W_4/(W_3-W_S)$	2.677	2.675	2.679	2.677
8	Apparent Specific gravity	$W_4/(W_4-W_S)$	2.713	2.707	2.715	2.712
9	Water Absorption	$((W_3-W_4)*100)/W_4$	0.50%	0.45%	0.50%	0.48%

Comments:

→ Maximum allowable Aggregate Water absorption value for Bituminous Concrete is 2.0%(MORTH table 500.16)

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Job No.: CQCE/BBMP/VP/W.No.10/2021-22 Date: 12.10.2021

TEST REPORT ON STABILITY OF MIX

Client	:	**Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore..
Agency	:	**Sri.V. Ponnuswamy,** Contractor, Bangalore.
Name of the Work	:	Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division
Source of location	:	Hot mix Plant, Bangalore
Type of Mix	:	Bituminous Concrete
Date of Testing	:	06.10.2021

The results of the tests conducted on the Bituminous Concrete mix sample are as follows:

Sl. No	Description	Test Result 1	Test Result 2	Requirement as per MORTH (Table 500-19)
1	Marshal Stability, Kn	9.12	10.24	9 Kn (min)
2	Marshal flow, mm	3.35	2.98	2 – 4
3	Percent air voids in Mineral Aggregate	13.84	14.65	13 – 15
4	Voids in Compacted Mix	3.62	4.65	3 – 6
5	Percent Voids filled with Bitumen	66.16	69.22	65 - 75
6	Density, g/cc	2.25	2.26	--

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Job No.: CQCE/BBMP/VP/W.No.10/2021-22 Date : 12.10.2021

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE

AASHTO T 164 & AASHTO T 30

CLIENT	**Assistant Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
AGENCY	**Sri.V. Ponnuswamy,** Contractor, Bangalore.
NAME OF THE WORK	Improvements to Roads and Drains at Kallappa Layout, Gopalappa Layout, Doddabommasandra 4th Block in Ward No 10 (Doddabommasandra) Vidyaranyapura Sub Division
SAMPLE ID	Hot Mix Plant, Bangalore
DATE OF TESTING	12.10.2021

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Sample 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	473	472.5
3. Weight of Asphalt and Mineral matter Extracted, g	27	27.5
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g	-	-
6. Weight of Bitumen Extracted, g. (corrected)	27	27.5
7. Bitumen content in %	5.40	5.50
8. Average	5.45	

GRADATION AFTER EXTRACTION

SIEVE SIZE	Test 1				Requirement as per MORTH table 500.17
mm	Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	12.2	12.2	2.6	97.4	90 - 100
9.5	65.3	77.5	16.4	83.6	70 - 88
4.75	98	175.5	37.1	62.9	53 - 71
2.36	46	221.5	46.8	53.2	42 - 58
1.18	42.3	263.8	55.8	44.2	34 - 48
0.600	51.1	314.9	66.6	33.4	26 - 38
0.300	43.9	358.8	75.9	24.1	18 - 28
0.150	32.1	390.9	82.6	17.4	12 - 20
0.075	49.2	440.1	93.0	7.0	4 - 10

For CIVIL AIM CONSULTANTS & ENGINEERS

Authorised Signatory

Sweetha. M.K
AE, BIO

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SIEVE SIZE	Test 2				Requirement as per MORTH table 500.17
mm	Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	12.2	12.2	2.6	97.4	90 - 100
9.5	65.3	77.5	16.4	83.6	70 - 88
4.75	98	175.5	37.1	62.9	53 - 71
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Note:

- This test report should not be reproduced except in full, without written approval of the laboratory
- The results indicated above are based on the tests carried out on the samples received in the laboratory
- Any Query regarding the report must be reported within 30 days from the date of testing

For CIVIL AIM CONSULTANTS & ENGINEERS

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